

EH-0431 Quality Assurance Needed for Offsite Vendors Performing Sample Analysis

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SAFETY & HEALTH HAZARDS ALERT

Quality Assurance Needed for Offsite Vendors Performing Sample Analysis
An analytical laboratory that was used by several Department of Energy (DOE) facilities for bioassay and environmental samples recently came under Federal investigation for allegedly falsifying analysis results. (See DOE Press Release R-94-220 issued November 8, 1994.)

The Office of Environment, Safety and Health (EH) surveyed the DOE complex and learned that approximately 10 percent of DOE's facilities utilized this laboratory for analysis of bioassay samples and 40 percent of its facilities utilized this laboratory for analysis of environmental samples. These analytical results were used for such purposes as (a) confirming worker internal exposures, (b) releasing material to the sanitary sewer system, (c) performing baseline environmental water analyses, and (d) releasing waste oil to a recycling facility.

Several DOE facilities had previously determined that this analytical laboratory was inconsistent in providing reliable analytical results. This determination was made on the basis of either the laboratory's analysis of quality assurance samples or as a result of DOE contractor audit of the laboratory. Conversely, some DOE facilities found that, depending on the type of analysis performed, this laboratory consistently performed well on their quality assurance sample analysis. Other DOE facilities did not assess and verify the capabilities of offsite laboratories performing sample analyses.

Other Related Incidents

In a related incident, a DOE facility announced in September 1994 that bioassay samples were never properly analyzed for approximately 30 workers who performed decontamination and decommissioning (D&D)

activities at the facility in 1991. Site management at the facility stopped all worker activities that required participation in a bioassay program. The involved workers were notified. Additional samples from a 1993 to 1994 work activity were also identified as not having been analyzed. An investigation was conducted to determine why the samples were not properly analyzed in a timely manner and to establish corrective actions to prevent future recurrence.

The facility's internal dose evaluation program was adequate for routine activities. However, the problem arose when the facility became involved in D&D activities that included working with different radioisotopes than those routinely encountered at the facility. The site did not have in place an adequate program, including appropriate procedures and management oversight, to ensure the adequacy of workplace and personnel monitoring to properly assess, minimize, and control radiation exposure to workers involved in D&D activities.

Actions Recommended

Several facilities are still evaluating the potential impact associated with their use of the analytical laboratory. Based on lessons learned from the above incidents, the following actions are recommended:

Every facility should implement a program to verify the competency and reliability of offsite laboratories providing sample analyses.

Sites involved in D&D or other non-routine activities that include new or unique mixtures of radionuclides or other hazardous materials must evaluate thoroughly both the workplace environment and site procedures. The evaluation should ensure the adequacy of procedures and workplace and personnel monitoring to properly assess, minimize, and control worker exposure to hazards prior to commencing these activities.

For more information, contact Pete O'Connell, Office of Health Physics and Industrial Hygiene, EH-411, at 301-903-5641.

This Safety & Health Hazards Alert is one in a series of publications issued by EH to share occupational safety and health information throughout the DOE complex. To be added to the Distribution List or to obtain copies of the publication, call (301) 916-4444. For additional information regarding the publications, call Barbara Bowers (301) 903-3016.